

CLAIMS

1. A method for determining an environmental condition by measuring a composition of a microbial population which has been exposed to said environmental condition.
2. A method for determining changes in an environmental condition by 5 measuring changes in a composition of a microbial population which has been exposed to said changes in an environmental condition.
3. A method for determining an environmental condition, comprising measuring a composition of a microbial population which has been exposed to said environmental condition, correlating said composition to a previously 10 compiled reference data file of a plurality of compositions obtained through exposure of said microbial population to a plurality of environmental conditions and determining said environmental condition on the basis of the outcome of said correlation.
4. A method according to any one of claims 1-3, wherein said microbial 15 population comprises bacteria, fungi and/or yeasts.
5. A method according to any one of the preceding claims, wherein said microbial population is intestinal flora or soil flora.
6. A method according to any one of the preceding claims, wherein said microbial population is a microbial population introduced into or occurring 20 naturally in a specific process.
7. A method according to any one of the preceding claims, wherein said measurement comprises the use of taxon-specific markers.
8. A method according to claim 7, wherein said taxon-specific markers are nucleic acid markers.
- 25 9. A method according to claim 7 or 8, wherein said composition of a microbial population is determined by means of one or more microarrays.

10. A method for controlling or monitoring an environmental condition, comprising a method according to any one of claims 1-9.
11. A method for controlling a process, comprising a method according to claim 10.
- 5 12. Use of a method according to any one of claims 1-11, for quality control of water, for control of a food preparation process, for optimization of crop cultivation, for the optimization of biodegradation in the soil, for the detection of soil pollution or for the detection of undesired microorganisms.
13. Use of a method according to any one of claims 1-11, for determining
10 a chemical substance in the soil, the air and/or in aqueous environment.